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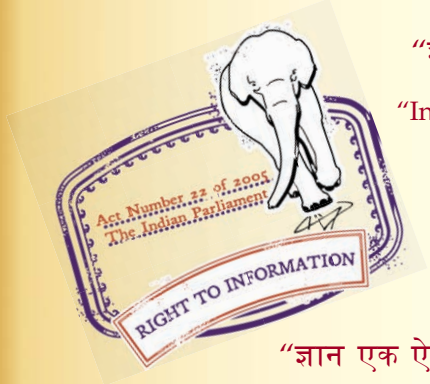
IS 8271-5-5 (1986): Quartz Crystal Units Used for Frequency Control and Selection, Part 5: Series CX for Oscillator, Section 5: Quartz Crystal Unit Type CX-05 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Indian Standard

SPECIFICATION FOR QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION

PART 5 SERIES CX FOR OSCILLATOR

SECTION 5 QUARTZ CRYSTAL UNIT TYPE CX-05

Piezoelectric Devices for Frequency Control and Selection Sectional Committee, LTDC 12 [Ref : LTDC 12 (971)]

0. General — This standard shall be read in conjunction with IS : 8271 (Part 1)-1981 'Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (*first revision*)'.

1. Outline and Dimensions — Holder outline shall conform to type CX [*see* IS : 4570 (Part 6)-1984 Specification for crystal unit holder : Part 6 Metal, solar seal, two pin crystal unit holder type CX].

2. Marking — *See* **8** of IS : 8271 (Part 1)-1981.

3. Construction and Workmanship — *See* **7** of IS : 8271 (Part 1)-1981.

4. Test Schedule and Detail Requirements

4.1 *General Conditions for Test* — *See* **9.2** of IS : 8271 (Part 1)-1981.

4.2 *Test Schedule* — The sequence and grouping of type, routine and acceptance tests shall be as per **9.1** of IS : 8271 (Part 1)-1981.

4.3 *Detail Requirements* — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE CX-05

Characteristics	Requirements
a) Holder and dimensions	CX (*See* **1**)
b) Frequency range	5 to 20 MHz
c) Frequency tolerance:	
Operating temperature range	50 ppm
d) Load capacitance	Infinity
e) Mode of oscillation	Fundamental
f) Operating temperature range	—55°C to +105°C inclusive
g) Test set, calibration values and rated drive level	*See* Table 2
h) Capacitance, shunt	7 pF maximum
j) Resonance resistance	*See* Table 3
k) Shock [As per **9.16.1** (Severity A) of IS : 8271 (Part 1)-1981]	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
m) Vibration [As per **9.15.1** (Severity A) of IS : 8271 (Part 1)-1981]	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
n) Temperature cycling:	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
p) Ageing:	
Frequency change permitted	5 ppm

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TABLE 2 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL

[Table 1 (g)]

Frequency Range	Calibration Values			Rated Drive Level	Test Set
	Resistance	Crystal Current	Resistor Voltage Drop		
MHz	ohms	mA	Volt	mW	
(1)	(2)	(3)	(4)	(5)	(6)
From 5 to 7·5	25	14	—	5·0±1·0	
Over 7·5 to 10	16	18	—	5·0±1·0	TS-330/TSM
Over 10 to 15	13	20	—	5·0±1·0	
Over 15 to 20	12	—	0·24	5·0±1·0	TS-683/TSM

TABLE 3 RESONANCE RESISTANCE

[Table 1 (j)]

Frequency Range MHz	Maximum Resonance Resistance ohms
From 5 to 7	50
Over 7 to 10	30
Over 10 to 15	25
Over 15 to 20	20

EXPLANATORY NOTE

This standard (Part 5/Sec 5) covers the requirements of crystal unit, quartz, style QC-26 of JSS 50906 (1971) 'Detail specification for crystal unit, quartz, styles QC-20, QC-21, QC-22, QC-23 and QC-26', issued by the Directorate of Standardization, Ministry of Defence (India).

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